BIOLOGY SPRING SEMINAR SERIES

Dr. David Johnson

Acting Chief, Environmental Risk Assessment Branch
Environmental Laboratory
U.S. Army Engineer Research and Development Center
Vicksburg, Mississippi

"Environmental Chemical Contaminants in Wild Sturgeon in the Lower Mississippi River"

Long-lived benthic animals experience repeated and/or prolonged exposures to sediments and their associated anthropogenic contaminants. As a result, these animals are at risk of elevated contaminant burdens. These contaminants are implicated in reproductive failure, physiological declines, and suppressed immunity to diseases in numerous aquatic species. They also pose potential health risks to consumers of sturgeon meat and caviar (legal industries in the US). The overall objective of this study was to determine baseline data for contaminant burdens in wild sturgeon in the Mississippi River watershed. A field collection on the Mississippi River near Ft. Adams, MS in January 2010 resulted in the collection of Shovelnose Sturgeon, a surrogate for pallid sturgeon, an endangered species. Sturgeon were examined externally and internally for morphological and physiological anomalies prior to processing. Relevant tissues (liver, muscle) and gut content were analyzed for common environmental chemicals (e.g., chlorinated pesticides, PCBs, and metals). Serum samples were also collected and analyzed for estrogen and progesterone concentrations to see whether chemical exposures correlated with endocrine function. These baseline chemical assessments are critical for understanding existing chemical contaminant burdens prior to additional contaminant exposures due to nearby anthropogenic activity.

Env. Sci. Building, Room 130 Friday, 28 January, 2011 2:00 pm